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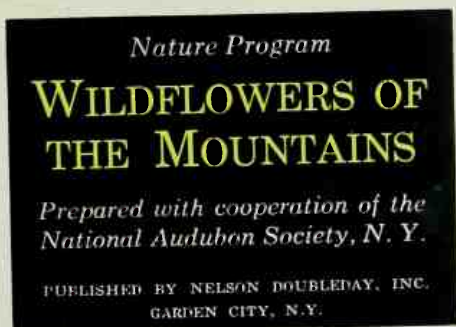
Nature Program

WILDFLOWERS
OF THE
MOUNTAINS

WILDFLOWERS OF THE MOUNTAINS

by

ROBERT S. LEMMON



WILDFLOWERS OF
THE MOUNTAINS

*Label
for
Album Case*

NELSON DOUBLEDAY, INC. GARDEN CITY, N. Y.

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THE MAJORITY of North American wildflowers, like most other forms of life, are strongly dependent on the environments and climates in which they grow. Some like it hot, some like it cold. Full sunlight means life to certain kinds and death to others. A wetland addict will perish as quickly in a desert as a desert-dweller will in a swamp. These and numerous other elements, many of them extremely complicated, are vital factors in what is often called natural habitat.

A small number of species, however, are comparatively tolerant about such matters and can get along almost anywhere, but these are far from typical of the plant world as a whole.

Mountain or Hill?

AS YOU READ this booklet on wildflowers of the North American mountains it will be a good idea to remember that the meaning of the term "mountain" depends somewhat upon what part of the country you come from. If you are a Far Westerner it may be that nothing less than 8,000 feet high deserves to be called a mountain. So, when you first see the rounded Catskills, Adirondacks or Great Smokies you are likely to think of them as merely fair-sized hills. To Easterners, though, these rolling, restful ranges are truly mountains and are officially classified as such. So, for present purposes, let's all be broad-minded about the matter!

Mountains affect outdoor plant life in many ways. For one thing, their altitude above sea level usually gives them a cooler climate along with shorter summers for growing and longer winters for lying dormant. Frequently, too, there is a greater annual precipitation in the forms of rain and snow. All of these factors, plus the frequent greater sunlight intensity at high altitudes, have a profound effect on soil conditions and plant reactions to them.



1. PLEATED GENTIAN IN THE HIGH ROCKIES

This delightful alpine species varies in size according to the character of its surroundings. Yet it is always a treat to find even one individual plant of it in full flower among the mountains.

Historically, most mountain flowers have adapted themselves to these influences for thousands or millions of years. The only substitute for them would be to live nearer to the North Pole where the greater distance from the Equator would compensate for a lower altitude. An excellent example of this alternative is the Crowberry, a dwarf shrub of our upper New England mountains which readily descends to sea level in more northerly Labrador and Newfoundland. Several other wildflowers which you will meet in these pages are influenced by a similar principle.

Pleated Gentian Varies in Size

MOST OF THE world's 300-odd gentian species are mountain dwellers noted for their dwarfish growth and spectacular flowers. Here in North America the Pleated Gentian (Plate 1) is the acknowledged leader of this high-country group. In one form or another you find this stunning

Westerner in the Mt. Rainier region and various other parts of the high Northwest. As a general rule it is a compact dwarf only five or six inches high. Many stems, each decked with little roundish leaves and topped with a single flaring, blue and white blossom of astonishing size, rise from its basal leaves. In parts of the Cascades, where the soil is particularly rich, this famous gentian reaches a considerably greater height, although at the cost of sacrificing a good deal of its charm.

Star Gentian Is Appropriately Named

ANOTHER MEMBER of our notable western gentian tribe is frequently called Star Gentian (Fig. B) because of the way its five narrow, distinctively pointed petals are arranged. It, too, ranges from six inches to a foot in height. Each of its stems bears up to ten blue to whitish blossoms. Down in the center of every flower there is a curiously fringed little pit filled with sweet nectar. The best places to find this odd gentian relative are somewhat boggy spots in the mountains of Colorado, Utah, and

Star Gentian's name comes from the distinctive shape of its numerous blossoms; there may be as many as ten of them on a single stalk. In addition to living in our western mountains it is found growing wild in the Old World.



Fig. B

northward. It is a hardy, long-lived plant that is equally at home in the alpine (mountainous) regions of Europe and Asia.

Giant of the Gentian Tribe

STILL A THIRD American member of this far-flung plant tribe is the odd Green Gentian (Fig. M). Relatively speaking, it is a real giant, since it grows anywhere from two to five feet tall and some of its leaves may be as much as a foot long. The blossom, of which our photographer obtained a very close-up view, is truly greenish in overall color. You can see it in the highlands of Wyoming and thence southward and westward.



Fig. M An especially large Green Gentian approaches the height of an average person, making it probably the tallest member of its group. The predominating green color of its blossoms is a rare occurrence in the mature flowers of plants other than orchids.

The superb coloring of the Fringed Gentian's blossoms, added to the strongly fringed edges of their petals, have given it world-wide fame among people interested in wildflowers. It is a pure North American.



4. THE MATCHLESS AMERICAN FRINGED GENTIAN

Fringed Gentian Has No Equal

PROBABLY THE MOST famous and beautiful of our native American gentians is the Fringed, (Plate 4). It is a highly temperamental, moisture-loving wildflower of our eastern States, flourishing as low as sea level in parts of New England but requiring the coolness of mountains as its range reaches down into our southern highlands. Any given plant of it lives for no more than three years, at best. Even in that space of time it may attain a branching height of more than two feet and produce several dozen of its incredibly beautiful autumn blossoms.

Confirmed Mountaineer!

ANOTHER INTRIGUING plant of very different appearance is the so-called Swamp Laurel (Plate 2). It is a low, straggling shrub which varies in height from a few inches to a couple of feet, depending largely on the altitude at which it is located. In the East you may find it in high, damp hills and mountains from Newfoundland to Pennsylvania, and in the Rockies from Alaska to California. One of its most entrancing midget forms is at home in the cold, lofty swamps of those western ranges where it blooms in the early weeks of the mountain summers. The



2. SWAMP LAUREL, AN EASTERN MOUNTAINEER

Swamp Laurel is a highly variable bush, depending on the climate and general character of the place in which you happen to find it. On the really big mountains it is hardly more than finger-high.

largest of the evergreen leaves on this dwarf bush are barely a half-inch long, yet its blossoms are truly laurel-like in their peculiar form. Many attempts have been made to grow it at lower, warmer levels, but few if any of them have really succeeded. Apparently it is a confirmed high mountaineer, or alpine plant.

Everybody's Favorite

NEARLY EVERYONE is familiar with the deliciously fragrant blossom sprays of the Lily-of-the-valley (Plate 3), that longtime favorite in wedding bouquets and gardens alike, but how many of us realize that it is an American wildflower which grows in our higher southern mountains from Virginia to South Carolina?

As a matter of fact, there is some botanical uncertainty about the life history of this long-lived, completely charming plant. There appear to be several forms of it, differing slightly from each other in the size,

color and fragrance of the blossoms. Most botanists believe that all of them belong to the same species, which is native in Asia, Europe and, as I have said, in well wooded parts of our southern Appalachians. It has been a favorite garden flower for hundreds of years, but it simply cannot stand full exposure to our hot summer sun day after day.



3. LILY-OF-THE-VALLEY, ALWAYS A FAVORITE

Scarcely anyone realizes that this long-popular flower grows wild on the wooded slopes of the Southern Appalachians. Not even the professional botanists are in full agreement about its family history.

In Golden Avens you have one of a group which is well represented in the Old World as well as the New. The present member belongs to the Rocky Mountain branch of the family.



5. GOLDEN AVENS, ONE OF A NUMEROUS CLAN

Member of a Numerous Clan

GOLDEN AVENS (Plate 5) belongs to a tribe of more than fifty genres distributed primarily through the chilly regions of the Western as well as Eastern Hemispheres. In many instances, including the Rocky Mountain native shown here, they are found only at altitudes high enough to provide a climate cool enough for their needs. Many of these hardy, long-lived plants are red-flowered, and some are standbys in gardens throughout the temperate parts of the world.

Stonecrop Thrives on Rocks and Walls

SOME PLANT names are a bit far-fetched, but "Stonecrop" (Plate 6) really makes sense. It is applied to all the nearly 300 species of sedums which are primarily natives of temperate and colder regions of the northern hemisphere. "Sedum," the official name, is derived from the



6. LOOK FOR THIS STONECROP IN THE WEST

The sedum, or stonecrop, presented here is only one of dozens which crouch among western mountain stones as if they were trying to hatch them. Its roots strike deeply into the crevices.

The leaves of Rose Crown, like those of other stonecrops, are specially constructed to store up moisture which the plant can draw on during periods of drought. A variation of this important precaution is also built into most members of the cactus tribe.



Fig. U

Latin *sedes*, "to sit." It was bestowed on them because of their family habit of settling themselves on rocks and walls where most flowering plants would soon perish. The connection between this classical origin and the popular title "stonecrop" is obvious.

Most stonecrops have thick, often narrow leaves which store up moisture that will keep the plants going during periods of drought. This is an important provision for any plant living in stony, well-drained situations such as those of typical stonecrop homes. Actually, these plants are so perfectly adapted to their particular way of life that most of them would soon die if placed in rich soil which always contains a good supply of moisture.

The stonecrop shown in the photograph is frequent in the high country from Alberta southward to South Dakota, Nebraska, New Mexico, and California. It is a tufty little thing from three to six inches high. Two distinct types of stems characterize it: the shorter, non-flowering ones thickly crowded with narrow leaves, which you see at the bottom of the picture; and the taller, flower-bearing ones which

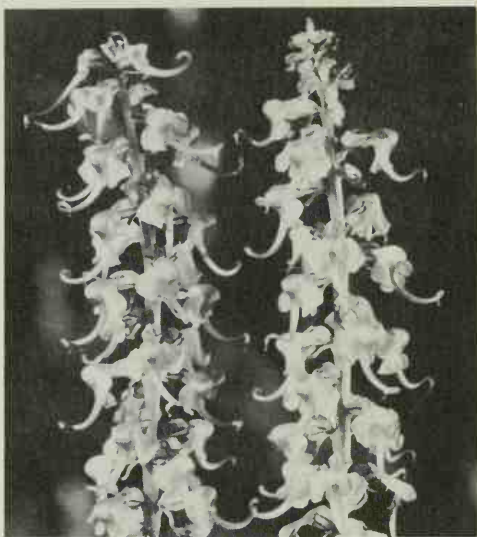


Fig. C

Flowers which strongly suggest the heads of some kind of animal are only occasional in the Rockies, or anywhere else. But your first view of Elephant Head shows clearly that here is one of them. What a strange contrast that its family name is Lousewort!

have no leaves at all. Many other stonecrops have a similar peculiarity. It is one of their roads to survival in places where more conventional plants would perish.

A True Internationalist

A QUITE DIFFERENT type of stonecrop is locally known as Rose Crown. Sometimes it reaches a height of eight inches, and its fleshy, up-curving leaves are crowded all along the upright stems. This latter characteristic is evident even in the young shoots, several of which show in the lower part of the photograph. (Fig. U).

Unlike the preceding species, to which it is related, Rose Crown is an internationalist in the sense that it grows wild in the colder parts of Europe and the Himalayas as well as our own western mountains. Its flower heads are about an inch wide.



Fig. F

A different lousewort whose foliage is so delicately divided that it well deserves the title of Fern-leaved. There are scores of related plants around the Northern Hemisphere. Most of them are looked upon as mere weeds, but nevertheless odd ones.

The name Rose Crown, as applied to this showy little stonecrop, is justified in probably two ways. First, there is the general effect of the red-purple or occasionally greenish flower clusters. And secondly there is the curious fact that its thick, fleshy rootstock gives off a distinct aroma of roses.

This neat-growing little plant is sometimes planted in properly constructed rock gardens where it does very well if given a perfectly drained spot where rainwater can never collect. It is a true perennial which will live for years if conditions are suited to its needs.

Lovely Flower with Unlovely Name

IN THE FANTASTIC Elephant Head (Fig. C) you see a perfect example of what an extremely close-up photograph of flowers sometimes reveals. The picture was taken in the Rockies between the famous Grand Tetons

and Yellowstone Park. It shows one of the larger members of a clan which bears the somewhat unlovely name of louseworts. This name certainly has no literal application to the plants or their habits, and its origin has been lost somewhere in the mists of horticultural antiquity.

The Fern-leafed Lousewort (Fig. F.) is another western species part of whose name is well chosen, for its foliage fronds strongly suggest those of small ferns. Its spires of yellowish flowers, however, are less spectacular than Elephant Head's when examined at close range. The plant's overall height ranges from six to about eighteen inches, depending largely on its age and location.

There are more than thirty louseworts in the United States and enough more in Asia and other parts of the Northern Hemisphere to bring the grand total to over 250. They have never become popular as garden flowers, although some species are quite showy and well furnished with fernlike leaves. There is something of a mystery about their requirements for success. Experimentors have found that they seldom last long in cultivation, quite possibly because they are suspected of being partially parasitic on other plants whose identity has not been fully determined. Our most frequent native species in the eastern half of North America is usually called Wood Betony. Its individual blossoms are yellowish or bronzy and, like the rest of this odd clan, the plant flowers in spring and early summer.

All of the louseworts, incidentally, belong to the large plant family which is headed by the spectacular Snapdragon, prime favorite of florists and gardeners alike.

Squaw-Grass Is Another Name for It

IN SHARP CONTRAST with the numerous louseworts, there are only three species in the beargrass tribe (Plate 7), and all of them are North Americans. The tallest of them is shown here, a widely distributed western mountaineer whose stately, clublike heads of creamy white blossoms are sometimes five feet above the clump of tough, grassy leaves from which the stalks rise. It grows in many parts of the mountains from California to British Columbia, but probably is at its best in open places on the well drained slopes and ridges of the Cascade Range.

There are believed to be only three species of beargrass in the world, and all are North Americans. The one shown here is noted far and wide for its great size and clublike heads of flowers.



7. BEARGRASS GROWS FIVE FEET TALL OUT WEST

Other local names for it are Squaw-grass and Elk-grass. It is one of the most spectacular of our native flowers, and is completely different from all others in its vast region except for one related but rare species which resembles it quite closely. The third member of the genus, usually called Turkey-beard, is appreciably smaller. Its rather limited range extends from the southern Appalachian Mountains into the sandy lowlands of New Jersey.

All of these beargrass species are late spring and early summer bloomers. In their native haunts they are tough and long-lived. Yet many intelligent attempts to grow them under cultivation have failed. The reasons for this are far from clear, although it may well be that some particular combination of subsoil moisture and certain chemical elements holds the key to the situation. Perhaps the secret will be discovered some day. Meanwhile let's enjoy Beargrass to the full in the wild mountain setting where Nature has planted it.



8. ALPINE AZALEA HUGS THE GROUND CLOSELY

The cardinal principle of the higher the mountain the lower the plant is ably demonstrated by the incredible Alpine Azalea shown here in full bloom. This intriguing shrublet is only inches tall.

A Hardy Dwarf

STRICTLY SPEAKING, the incredible Alpine Azalea (Plate 8) is not really an azalea. Botanists tell us that it is allied to the laurels and the sand-myrtles, most of which are evergreen shrubs of great beauty. Nevertheless, its relatively big blossoms do look a good deal like those of many azaleas.

Alpine Azalea is a perfect example of the general rule that high alpine flowering plants are dwarf in stature but produce relatively huge blossoms in July or August. The former characteristic is primarily due to the length and severity of their dormant season with its heavy and protracted snowfall. And the latter trait is probably a result of the need for special effort to assure insect pollination of the blooms during the short season of active growth.

So this flat little evergreen shrub grows only a few inches high as it hugs the ground where it cannot be blown away by the great mountain winds. Usually its annual branch growth is only a small fraction of an inch—hardly enough to be seen even on close examination. Its sturdy oval leaves, a number of which can be seen in the photograph, are correspondingly tiny.

Alpine Azalea lives in the subarctic regions of the Northern Hemisphere. On our continent, it is a dainty feature of the flora near the top of Mt. Washington in New England's Presidential Range, and of Baxter Peak in Maine. Many of the higher peaks in our northwestern mountains know it, too; that is where the present photograph was taken. Farther north it thrives at lower altitudes, as do numerous other true alpiners. You see, it is certain climatic conditions rather than mere altitude which such super-hardy plants require. Alpine Azaleas often range so far north that they can descend practically to sea level.

Mountainside Flower Show

MANY OF THE damp mountain meadows along the Continental Divide and its adjacent ranges are incredibly gay in summer with monkey-flowers whose flaring blossoms run through a wide variety of yellows, reds, pinks, and even a few whites. Some of them grow to a height of two feet, while others are no more than compact, creeping dwarfs. Taken as a group, they contribute handsomely to the natural flower shows for which the mountain backbone of North America is so famous.

One of the most charming of the dwarf monkey-flowers in the high meadows of the Sierras is the Little Yellow (Plate 9). It is a prostrate

You have to give the Little Yellow Monkey-flower credit for knowing how to produce pleasing flowers and display them against a harmonious background of leaves. It is a leader among western mountaineers.



9. THE WESTERN LITTLE YELLOW MONKEY-FLOWER

creeper which spreads into sheets of dense, $\frac{3}{4}$ -inch leaves so sprinkled with silvery hairs that they make one think of primrose foliage. From this engaging carpet rise countless inch-long stems each of which is tipped with a single up-facing blossom of surprising size. In the early morning sun, while the dew still glistens on the hairy leaves, tiny yellowish-green frogs, of exactly matching color, go hopping this way and that over the living mat.

All summer long, and late into the fall, the Little Yellow Monkey-flower continues its display with little if any pause. It is indeed a top award winner in a plant tribe of nearly a hundred members.

Another fine monkey-flower in the same general region goes under the appropriate name of Tall Yellow (Fig. P). The tubular parts of

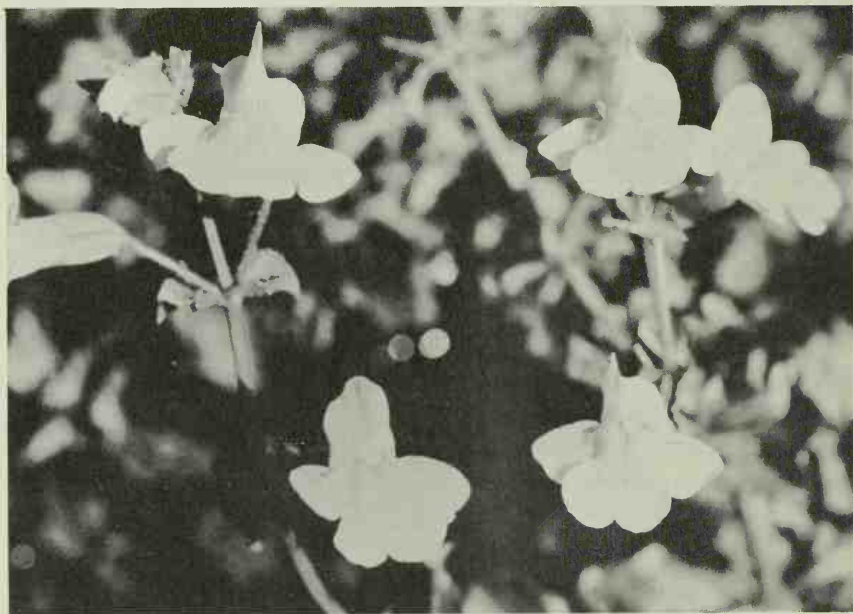


Fig. P

Tall Yellow Monkey-flowers clearly show relationship to their Little Yellow cousins; indeed, at a quick glance you might take them for the same plant on a much larger scale. It grows by the millions in the great far-sweeping mountain meadows of the Northwest.

its flowers are more than an inch long, and their opening throats are often touched with little red spots. The plant is not a mat-former, like the Little Yellow, although it often grows in large masses. Its normal habit is to send several stalks straight upward with a tendency to branch a little toward the top. Thus each main stem often produces eight or ten blooms, opening in sequence as the stalk lengthens.



10.

ROCKY MOUNTAIN MONKEY-FLOWER

So many monkey-flowers have yellow blossoms that you might be surprised to find this obviously red one. It frequently associates with the yellows in various parts of our western mountains.

The Red (or Pink) Monkey-flower (Plate 10) grows in somewhat similar fashion and may reach a height of two feet. It is one of the showiest of western mountaineers and contributes generously to the glorious floral displays of its vast region. Its leaves, oddly enough, have somewhat sticky surfaces. You sometimes see it intermixed with the several yellow species, although it usually prefers somewhat drier places than they do. There is also a pure white form of it which, in a way, is even more intriguing.



12.

PIN-CUSHION FLOWER'S LEAF MOUND—BUT A FEW INCHES HIGH

To see a Pincushion-flower in full bloom is to marvel at Nature's ability to create great beauty in mountain-top settings dominated by fierce winds, violent storms and winter temperatures far below zero.

Pin-cushion Plant—an Engaging Dwarf

PIN-CUSHION PLANT or *Diapensia* (Plate 12) is one of the world's most astonishing high alpine. It is a sort of semi-shrub with minute evergreen leaves, and it forms dense, cushionlike tufts seldom more than two inches high but spreading to a diameter of nearly a foot. At flowering time in July and perhaps August it sends dozens of little red stems slightly above its leaf level, each bearing a single open-faced, creamy white blossom. Often it is so closely associated with the Alpine Azalea that both of them practically intermix. If you will refer to the photograph of the latter plant you will notice two white blossoms at the upper left side and a smaller one at the lower right. All three belong to a *diapensia* which has crowded into the azalea, or vice versa.

There are only two known *diapensia* species, both quite similar in appearance. One of them has been recorded as living in the Himalayas at altitudes of 10,000 to 14,000 feet. The other is the one shown in our photographs. It grows abundantly on the higher mountain summits of New England and New York, and thence northward in suitable locations as far as the arctic. I have stood in the famous natural "alpine garden" just below the summit of Mt. Washington and seen hundreds of these engaging dwarfs, from thimble-size babies to grand-daddies as large as dinner plates, scattered in all directions.

Mountain Cranberry Makes Excellent Jelly

ANOTHER CHARMER among the high mountain shrubs and semi-shrubs is the Mountain Cranberry (Fig. O). It is a prostrate creeper with

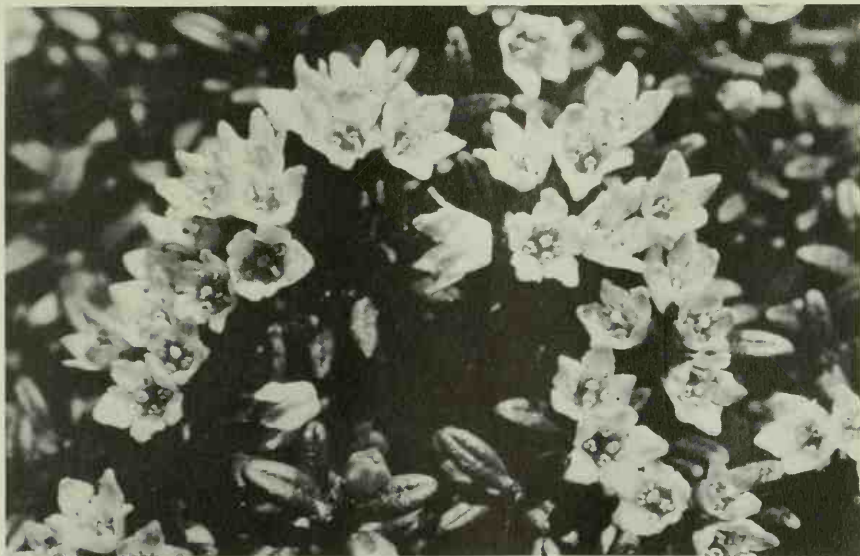


Fig. O

Mountain Cranberry combines cheerful good looks and valuable food qualities with remarkable success. It is a tough, evergreen shrublet which dwells on our northern mountains and extends its range to the edge of the true arctic.

thickish evergreen leaves from $\frac{1}{4}$ to $\frac{1}{2}$ inch long and delightful white or pink-tinged little flowers often produced in great numbers. In late summer these are followed by dark red, long-lasting berries from which excellent jellies and preserves are made by the people of northern Canada. There are really two forms of it—variety *minor*, shown in the photograph, and a slightly larger one which is less insistent on high alpine conditions. Both extend far into the arctic where, at times, they are essential food items for man and beast.

Mountain Cranberry normally spreads into large, somewhat irregular sheets by means of roots which send up stems at intervals and steadily enlarge the size of the colony. It ranges southward from the arctic through the subarctic to the mountains of New England, Minnesota and British Columbia. In some instances both forms are found on the same mountain—the smaller one at the summit and the larger at lower elevations. On the coldest peaks, such as Mt. Washington which reaches well above timberline, only the smaller form is found.

Some Like It Cold!

TO THOSE of us who think of the marsh-marigold as essentially a plant of wetlands no more than a few hundred feet above sea level it may



11. THIS MARSH-MARIGOLD IS FROM THE ROCKIES

All of the marsh-marigolds prefer to live in marshy places, but this one also likes the cold climate found in alpine regions on many of North America's high western mountains.



Fig. D Oddly enough, Grass of Parnassus could not possibly be taken for a grass; its leaves and blossoms are completely ungrass-like. The latter, especially when they are seen at very close range, are fascinating in the details and symmetry of their design.

be a surprise to learn that this genus of only about a dozen members contains a few species which prefer to live in really frigid places. One of these cold addicts is the white-petaled presented in Plate 11. It is an alpine bog plant of the Montana, Washington and British Columbia mountains. Each of its blossoms is borne on a single personal stem instead of the several-flowered stalks of our popular eastern yellow species. The leaves, as the photograph shows, tend to be more pointed than the almost circular ones of our lowland species.

Incidentally, the yellow marsh-marigold of the eastern States is also native in suitable moist locations along our northwestern coast. All of the group (which has no relationship to true marigolds, by-the-way), are unusually long-lived plants when growing under acceptable circumstances. Occasionally they will produce a crop of autumn flowers as well as the traditional spring ones.

No Relation to Grass

EVEN A FIRST meeting with Grass of Parnassus (Fig. D) proves that it is not even distantly related to any known kind of grass. One evidence of this is the fact that it has a basal clump of kidney- or heart-shaped leaves wholly different from those of grasses. Furthermore, it produces pure white flowers of great beauty. In the present species these are enticingly fringed along the lower sides of the five petals. These fringes are more or less interlocked, as though for mutual support.

Its popular name of Grass of Parnassus appears to have been assigned to the clan by a Greek physician, Dioscorides, nearly 2,000 years ago. Perhaps he was more familiar with Mt. Parnassus than with grasses. Modern botanists classify these delightful plants as members of the highly complex saxifrage family.

About two dozen species of these intriguing bog wildflowers are native in North America. The one shown here is widely distributed in the mountain regions from California to Colorado and northward into Alberta and Alaska. It reaches a height of nearly a foot, which is about midway in the range attained by its relatives. White and yellow are the only known flower colors in the whole group.



13. EVENING STAR GROWS F MONTANA SOUTH

Its habit of not opening its flowers until the approach of evening lends true meaning to this westerner's popular name. Its blooms invariably show a refined loveliness that would do credit to any plant.

Besides the western kinds of Grass of Parnassus, two species grow wild in the eastern parts of the country. One of these haunts swamps and low meadows from New Brunswick to Manitoba and southward to Virginia. Another is found in wet places among the high mountains of Virginia and North Carolina.

Late Afternoon Display

EVENING STAR (Plate 13) is not necessarily a confirmed mountaineer, although it often climbs to high altitudes provided they offer dry conditions and shelter from strong winds. In general it lives from Dakota and Montana to Texas and grows to a height of two feet or more. Any given plant of it may or may not last for several years, perhaps depending largely on the condition under which it is living.

The outstanding feature of this well-named plant is its fragrant, superbly designed flowers. Each one has a spread of five inches and bears ten graceful petals. A final touch is the cluster of 200 or more pale yellow stamens which rises from the center almost like a sunburst.

Evening Star's blossoms do not open until late in the day, but when they finally spread their petals, how splendidly they justify your waiting!

Here is a plant which, with some reservations, does equally well in mountain country and out on the plains below. This seems to indicate that it is easy to grow in gardens, but watch your step!



14. THE ODD FLOWERING SPIKES OF BLAZING STAR

Blazing Star Has Showy Spikes

THE BLAZING STARS (Plate 14) comprise another group of about twenty-five species which thrive in dry locations varying from mountains to lowlands. All of them appear to be native North Americans with rather similar characteristics and general appearance. The flowers are either rose-red or purple, depending on the species.

The one shown in the photograph ranges most of the way from Minnesota and Saskatchewan to Texas and Mexico. In Colorado, especially, it definitely climbs into the mountains. Like all of its relatives it is normally tough and long-lived, with rather insignificant foliage and spire-like flower heads. Each individual blossom fans out into a jumble of slender parts which produce a delicately tousled, wind-blown effect. The top of the spire may be anywhere from ten to thirty inches above the ground.

Blazing stars grow from tubers which form small offsets and, in time, develop sufficient size and strength to stand on their own feet, as it were. This method of self-reproduction is supplemented by flower-produced seeds. Altogether, Nature has really done her best to assure the future of the race.

Thus far, only two or three of the blazing stars have been introduced into flower gardens. Some planters find them easy to grow, while others are much less fortunate. The whole situation points toward a belief that we still have much to learn about the obscure requirements of these individualists.

Tiny Jewel Hugs the Ground

IN THE HIGHER portions of the Wallowa Mountains, one of Oregon's most alluring ranges, the exquisite Dwarf Forget-me-not (Plate 15) is at its unbelievable best. It is a wee, ground-hugging jewel, clothed in frost-like wool so short and dense that it defies analysis except through a strong magnifier. In summer this perfect surface is sprinkled with yellow-centered blossoms.

Even botanists are somewhat confused over the exact classifications involved in the forget-me-not category. The same type of blue and yellow or white and yellow blossom, however, seems to characterize



15.

BEWITCHING DWARF FORGET-ME-NOTS SPRINKLE WALLOWA MOUNTAINS IN OREGON

This is something different in forget-me-nots—a high alpine with the unique charm that results from a combination of dwarf growth and countless blossoms of perfect form and color.

all of the many members. So does a preference for dampish or actually wet soil and plenty of sunshine. The fifty or more known species are distributed through the world's North as well as South Temperate Zones, and it is entirely possible that not all the existing kinds have yet been discovered. In any event, the haunting perfection of the truly alpine forms will probably lead the parade forever.

The Spectacular Blue Camas

THE BLUE THEME is expanded through our western mountains by the half-dozen or so members of the camas tribe. It is well represented by the Blue Camas (Fig. G) whose slender stalks lift starry blossoms as much as two feet above the ground. A single plant bears from ten to as many as forty blooms. These vary from the deepest ultramarine to almost white, depending on the particular form involved. In some of the mountain meadows the plants stand so thickly that during the spring their ranks suggest a shimmering blue sea stretching away into the distance.

Camases grow from sturdy bulbs which were a staple article of



Blue Camas has a confusing way of displaying its narrow petals in white dress as well as various shades of blue. In its native mountain meadows it often grows so thickly that, at the peak of its season, it dominates the whole scene.

Fig. G

Indian diet for many centuries. Their slender leaves vary considerably in length and stiffness, but the general effect is wavy and ribbonlike. The entire plant is thoroughly pleasing, with the crowning glory lying in the blossoms.

Camases have been widely introduced into lowland gardens where they usually do well if provided with ample soil moisture during the spring. In addition to the mountain species there is a less spectacular kind which is native in lowland regions here and there through our eastern and midland States.

Rocky Mountain Beauty

POLEMONIUMS, too, have the double distinction of being popular in gardens as well as among the western mountains which are the native land of most of them. Some, such as the Alpine Skunkflower (Plate 16), are notably compact. Its faint odor has given rise to its peculiar local name.

This particular polemonium, unfortunately, is far from well-known. It hails from subalpine parts of the Rockies where, in early summer, its surprisingly large flower clusters on their tiny stems are raised just above the basal tuft of twisted, ground-hugging leaves. This foliage, incidentally, is rather sticky on the surface, a characteristic whose function is not too clear.

The polemoniums are still another group which is not confined to mountains. One of them, often known as Spring Polemonium, is native in open, lowland woods, thickets and meadow edges in many parts of the East and as far south and west as Alabama, Kansas, and Minnesota. The group as a whole is distantly related to the phloxes. The popular name of several species is Jacob's Ladder, derived from the ladderlike arrangement of the leaves along the foliage stems. An-



16.

ALPINE SKUNK FLOWER—A ROCKY MOUNTAIN BEAUTY

To many visitors among the mountains of our Northwest this trim polemonium stands out with the essence of refined wildflower beauty. Its local name of Skunkflower is little less than a slander.

other favorite name is Greek Valerian, for no valid reason which I have been able to find, since it is neither a valerian nor Greek.

The Vigorous Phacelias

FLOWERS OF A completely different character are offered by the Purple-fringed Phacelia (Fig. E). Its crowded blue blossoms, always at the tops of hairy, upright stems, fairly bristle with long stamens. The plant flourishes among the mountains of Idaho and adjacent States. Although it may not be beautiful, it certainly stages a fantastic show while in full bloom.

The phacelias are a puzzling crew, largely because of their wide variety of flower and foliage effects. In some cases the blossoms are borne rather sparingly along small side branches. Several species have neatly oval leaves, while those of others look almost as though they belonged to a small maple tree. There are dwarf and creeping kinds in addition to the taller upright ones. Flower colors range from deep



Any way you take it, the Purple-fringed Phacelia is an astonishing plant, certain to arouse keen interest if not admiration. Its hosts spread so widely over thousands of mountain acres in the Far West that their vigor seems almost overwhelming.

Fig. E

All of the high mountain wild geraniums are more compact growers than their lower country cousins to which most of us are accustomed. Their flowers, however, are of at least normal size.



17. ONE OF MANY SUB-ALPINE WILD GERANIUMS

purple to white, with many intermediate hues which even an experienced painter would have trouble in naming.

Altogether there are well over a hundred kinds of phacelias, most of them credited to western North America. With us, they are at home, in one form or another, from the arctic zones of the great northern mountains southward to a height of only a few thousand feet among the desert mountains of California. Others grow wild in many overseas parts of the Northern Hemisphere.

Mountain Geranium

THE TRUE GERANIUMS, or cranebills, are an even larger group which contains well over 250 species. Dozens of these are North American natives distributed over the northern and middle latitudes of the United States, spilling over into Canada and southward almost to the Gulf Coast.

The habitats of these usually airy, delicate-looking wildflowers vary from sunny, damp meadows to average woodlands and upwards into the mountains of the East as well as the West. One of the loveliest of the "high livers," more compact in growth than most of its cousins, is presented in Plate 17.



18. HULSEAS ARE WIDESPREAD IN OUR WEST

Hulsea blossoms make one think of dandelions, although the plants are entirely unrelated. The minute true flowers are massed in the center. The showy double ring surrounding them consists solely of "rays".

The name geranium is from the Greek word meaning "crane." This led to the name cranesbills which is often applied to the whole group. It sounds a bit silly until you see the oddly long, slender seed capsules which are beginning to protrude from the passé flowers near the bottom of the photograph. By the time these containers are ripe they actually bear some resemblance to the bills of the cranes or herons.

June and July are the principal flowering months for our mountain geraniums. When suitably located they color huge areas with their purplish to almost white blossoms.

Rock Garden Possibility

BY WAY OF contrast with geraniums, the dozen or so golden-rayed or sometimes purplish hulseas are named after Dr. Hulse who collected plants in California many years ago. They are frequent in numerous sunny dry mountain places from California and Nevada northward.

As the photograph (Plate 18) shows, a typical hulsea is a low, somewhat woolly plant with comparatively huge blossoms. The foliage of some of them suggests dandelions, but there are true leaves along the short, solitary stems. One of these days their tribe may be-

come popular in well planned rock gardens, for they have much to offer for those who understand their cultural needs.

At Home in Asia, Europe, and North America

A MUCH LARGER, more far-flung group of North Temperate and frigid zone plants is made up of the potentillas, or cinquefoils (five-fingers). They vary enormously in size and character of growth—some are rather hard-stemmed shrubs of moderate height while others squat tightly on the ground or even disappear entirely for the winter.

Shrubby Cinquefoil, shown in Plate 19, runs into many forms varying from one to four feet in height and bearing numerous sizable blossoms which are predominantly golden yellow but occasionally white. It starts to flower in June and often continues far into August.

This species is one of the world's most widespread wildflowers. The record shows that it grows naturally in both dry and boggy soils in Asia, Europe, and across North America. Frequently it finds its rugged



SHRUBBY CINQUEFOIL GLOWS WITH GOLDEN BLOSSOMS

Few wildflowers vary more widely in size, growth habit and natural distribution than this flowering shrub. Some of its finest forms are in alpine areas, especially among our western mountains.

way high into our mountains, especially if the soil is rather well supplied with lime.

In addition to its natural forms, Shrubby Cinquefoil has been used by several famous plant breeders in the development of larger and even showier hybrids for ornamental flower gardens. One of these has lovely cream-white blossoms and leaves whose undersides are silvery white. Another has similar foliage with yellow flowers.

Goldcup (Plate 21) is also a potentilla, although more of an alpine plant and, therefore, considerably lower and more compact in stature than its shrubby cousin. Unlike the preceding species, it is present only in our western mountains from Wyoming to New Mexico where, during the summer, it is one of the loveliest flower features.

Plants Without Leaves

THE INDIAN PIPE family, represented here by Pine Drops (Fig. J), is as strange as any you are likely to find in the whole flowering plant kingdom. Its members contain no chlorophyll, that green coloring matter present in the vast majority of plants. Under the stimulation of daylight, chlorophyll acts to manufacture starchy plant food out of



21. GOLDCUP GROWS FROM WYOMING TO NEW MEXICO

Here is another of the almost countless cinquefoils or potentillas, this time from dry regions of the West. Its golden blossoms, shaped somewhat like a buttercup's, are produced in unbelievable profusion.

Pine Drops are confirmed individualists and differ in many ways from all the other plants which we ordinarily call wildflowers. Among other things, there is not a single drop of green coloring matter anywhere in their systems. Also, they feed on the remains of other plants.

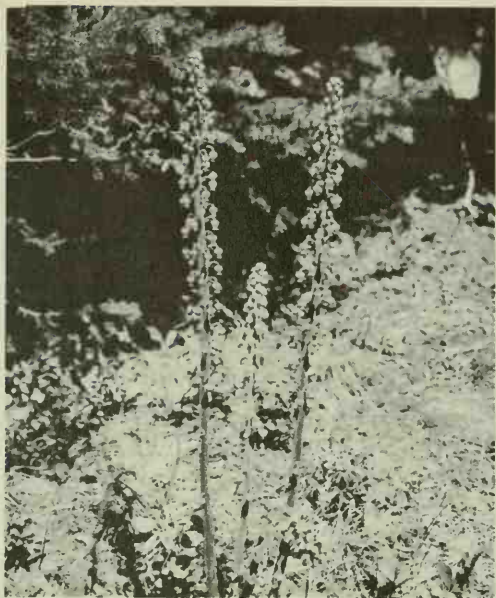


Fig. J

water and carbon dioxide. Without it life would be impossible for trees, shrubs, and countless other flowering plants. Yet Pine Drops make out very well indeed with no chlorophyll at all. They even go so far as to produce healthy blossoms and seeds of their own.

The life secret of Pine Drops and their several allies, such as the familiar Indian Pipe of our eastern woods, is that they are saprophytes—in other words, plants that live on dead or decaying organic matter in or on the ground. Their fast-growing, threadlike roots spread extensively through the blanket of rotting leaves, branches and what-not which carpets the forest floor and pick up the readymade food necessary for saprophytic existence. These plants have no leaves.

Pine Drops stems are reddish brown and grow from one to five feet tall in the Colorado and other western mountain forests. As you can see, each stalk bears fifty or more inverted, urnlike flowers of an indeterminate sort of brown. These are followed by countless little seeds some of which, after falling, germinate and then live the same sort of life their parents did.



0.

THIS SHOOTING STAR'S NAME COMES FROM THE CURIOUS FORM OF ITS BLOSSOMS

All of the many and widely distributed shooting-stars have the same general type of growth and blossoms. The latter give an interesting impression of being about to take off into space.

A Spring Bloomer

SHOOTING STAR (Plate 20) is far more colorful as well as orthodox in its manner of living. It is widely distributed through the mountains from Wyoming to New Mexico at altitudes almost great enough to qualify it as an alpine plant. It is only one in a clan of about forty members distributed from Maine to Texas and the Atlantic to the Pacific. Some of the group are also natives of northeast Asia.

All shooting-stars are characterized by similar formations: a basic tuft of spreading foliage from which rises a single leafless stalk crowned with a group of nodding flowers. They are primarily spring bloomers. As a rule they grow in dampish, well drained soil which is fairly well shaded during the summer months.

This particular species, which reaches a height of eight to sixteen

inches, ably demonstrates the racial type of cyclamen-like flowers. Their peculiar form actually suggests the swift movement possessed by a real shooting star. It is one of our most delightful wildflowers, in the mountains or anywhere else. Like most of its relatives, it often does well in gardens if provided with soil and exposure conditions similar to those in its natural haunts.

Dotted Saxifrage Has Exquisite Blossoms

AN ENTIRELY DIFFERENT sort of mountain plant, the Dotted Saxifrage (Fig. K), also can boast of an extensive natural distribution. In North America it grows wild from Alaska to Alberta, in the Cascades Mountains of Washington, and southward through the Rockies to New

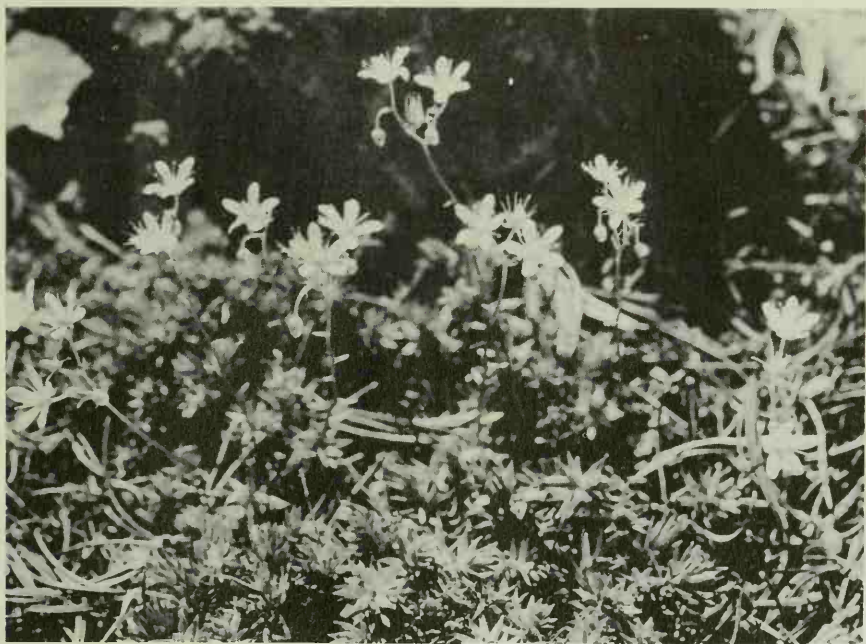


Fig. K Dotted Saxifrage gives an excellent demonstration of its tribe's frequent makeup—a dense, low mass of almost prickly leaves from which rise slender stems whose branchlets are tipped with all-white or pink-dotted blossoms. The whole combination is fully functional.

Mexico. It, or an extremely close relative, also dwells in the colder parts of Asia.

The prickly little leaf tufts of Dotted Saxifrage cling as tightly to high mountain cliffs as if they were part and parcel of the rocks themselves. When June arrives slender, top-branching stalks rise from them to a height of five or six inches, crowned with buds which expand into all-white or pink-dotted blossoms of exquisite beauty. The whole effect is so dainty that it seems incongruous in a land of such awesome ruggedness.

Botanical classification of the saxifrages is so complex that the exact number of existing species is problematical. It may well be that the grand total approaches the 400 mark. They are natives of the Northern Hemisphere's temperate and boreal regions, principally those which are alpine in character. Asia has comparatively few of them, and they are decidedly rare in South America. It is highly doubtful if there are any at all in the Pacific Islands, Australia, and South Africa.

Heart-leaved Arnica Bears Two-inch Blooms

MANY KINDS OF wildflowers have long been noted for the medicinal value which lurks in their physical structure and can be extracted for



22. HEART-LEAVED ARNICA BEARS TWO-INCH BLOOMS

The whole arnica group is marked by unexpected traits some of which are entirely hidden. All of our truly American species are showy when in bloom, their individual flowers sometimes spreading almost three inches.

human use by various processing methods. One of these intriguing plants is a European arnica whose roots are the source of the counter-irritant and tincture whose name is derived from the ancient name of the whole genus.

Heart-leaved Arnica (Plate 22) is one of the handsomest members of this plant group which contains a large but undetermined number of species. It is definitely a mountaineer of the Rockies and westward where it lifts its almost two-inch blossoms as much as two feet above the ground, although the average is considerably less than that. The leaves, as the name suggests, are definitely heart-shaped and frequently covered with dense, fine "hairs." This hairiness extends to the stems, as evidenced in the lowest part of the photograph, and is so pronounced below the petals that it looks almost bristly.

All of our western American arnicas are showy plants. In some places whole mountainsides seem to shimmer with their golden glow.

The Alpine Buttercup Has Fall Display

TO MOST AMERICAN wildflower folk the name "buttercup" signifies a fairly tall, somewhat weedy plant which grows rampantly in our wet meadows and on sunny slopes where the soil, especially in spring

A buttercup of buttercups, a compact little plant with none of the legginess which marks most of its better-known relatives. Yet its shining blossoms are genuinely cuplike in shape.



23. THE LOWLY ALPINE BUTTERCUP OF THE WEST



Fig. L In the Alpine St. Johnswort one finds another example of how normally tall plants are dwarfed by living for countless centuries under the harsh realities imposed by high mountain homes. Its dainty blossoms with their "sunbursts" of stamens are bright yellow.

and early summer is well supplied with moisture. The shape and glistening yellow of its neat flowers are clearly justified reasons for its popular name. What is not usually realized is that the species which stage the most spectacular show were originally Europeans which were introduced to this country many years ago and have made themselves thoroughly at home.

The Alpine Buttercup (Plate 23), however, is an American kind through and through. This is only one of a number of truly high-altitude species which are natives of the upper levels in our western mountains. It is relatively compact and low-growing, with numerous blossoms which, compared with their parent's size, are notably large. The plant in the photograph has just started to open its annual flower show. An idea of the beauty of the full display can be gained by checking the number of additional buds which already are showing color.

High Alpine Meadow Resident

THIS NOTABLE exception to a "weedy" family habit has a parallel in the Alpine St. Johnswort presented in Fig. L. The majority of its numerous far-flung relatives are either scrawny bushes or gangly perennials, despite the frequent beauty of their individual blossoms.

This little resident of high alpine meadows among our western mountains is neat and tidy throughout its normally long life. In reality it is a miniature, slow-growing bush only six or eight inches tall whose slim branches are trimmed with matching pairs of oval, silvery leaves. At their tips are clusters of yellow blossoms delightfully decorated with flaring stamens of surprising length. Since the unopened buds are often bright red and continue expanding for a number of days, the color effects during the height of the flowering season are delightful.

St. Johnsworts, as a race, are widespread through most of the Northern Hemisphere. Only a handful of the 200 or so known species are native south of the Equator. Two of the largest North American kinds, one in Tennessee and the other found from New Jersey to Florida, Missouri and Texas, ultimately grow to a height of six feet.

Show Piece of Our Western Mountains

THE ROCK PAINT-BRUSH or Painted-cup (Plate 24) is just one of a peculiar group which has been described as the most barbarically colored plants to be found in all the West. It is a mountaineer whose blossoms, like those of its relatives, are not what they seem. The actual true flowers are almost ridiculously insignificant; those really showy, often brilliantly colorful parts are merely bracts—somewhat scale-like leaves which are closely associated with them. These bracts vary between clear crimson, blood-red, dark pink and salmon, according to the particular species under observation.

There are numerous species of paint-brushes distributed through the mountains from central California northward. All of them are believed to be more or less saprophytic—in this case, dependent on the roots or decaying parts of other plants in the soil. Apparently various paint-brushes demand different kinds of "host" plants to feed on, and will languish or even die without them. This is such an inborn trait that, when

paint-brush seeds are sown under cultivation they sprout readily enough but, when they are old enough for you to have hopes for their future, they gradually depart this earthly realm.

Incidentally, these fantastic plants are officially named *Castilleja*, after a noted Spanish botanist, but if you try calling them that in the Far West, be sure to pronounce the *j* like a *y*. Otherwise you are likely to be branded as just another of those greenhorns from back East!

This strange-looking plant, along with several close relatives, is one of the famous show-pieces of our western mountains. At times, during the summer, it seems to be growing practically everywhere.



24.

ROCK PAINT-BRUSH, OR PAINTED-CUP

Helmet-Shaped Blossoms

NO SUCH ODDITIES of pronunciation and life requirements bother the monkshoods, represented in Fig. N by a species that is widely distributed in the Colorado Rockies and other mountains of the Northwest. It is an outstanding early summer bloomer which, in congenial locations, reaches a height of two to four feet. On the other hand, in poor soil it may be dwarfed to a mere foot.

The predominant flower color of this upstanding beauty is rich blue to yellowish white. The upper portion of each blossom is oddly hood-

or helmet-shaped, a characteristic which runs through the whole group and led to the popular name of monkshood. In the present case the flowers measure a little over an inch from top to bottom. They are well distributed along the upper portions of clean-cut, upstanding stalks.

It seems strange that plants of such beauty should contain sometimes dangerous poisons. The official name of the group is *Aconitum*, which gives a clue to the character of their best known drug content. Several species are the chief source of the druggist's aconite, and a poisonous alkaloid named aconitin is obtained from a European species. The thick, pulpy roots are the principal stronghold of these substances, but in some cases the flowers and leaves are also poisonous.

A True Westerner

IN THE HIGHER parts of the California mountains, and northward to and even beyond the Colorado Rockies, the Scarlet Gillia or Trumpet

A side view of the blossoms on this spectacular plant clearly shows why it goes by the name of "monkshood." The flowers are normally some shade of blue and the topmost one may be as much as four feet above the ground.

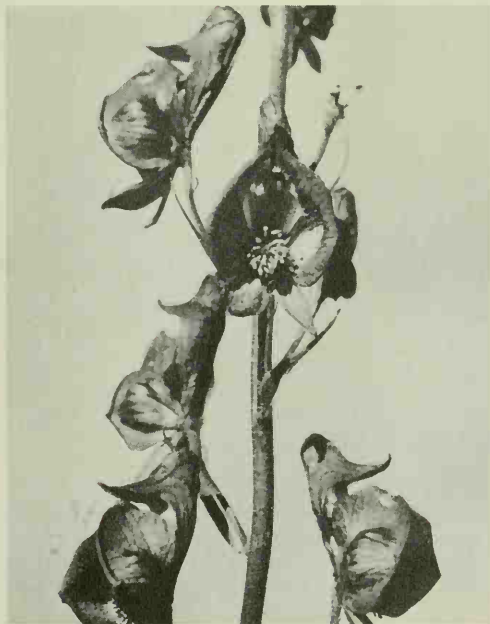


Fig. N

Flower (Plate 25) is a star attraction every summer. Its height varies from one to two feet, the lowest plants being those at the highest altitudes. Everywhere throughout its range the slim leaflets are favored tidbits among all grazing animals, both wild and domestic.

This gillia's blossoms are so astoundingly trumpet-like as to be scarcely credible. Their slender tubular parts are often $1\frac{1}{2}$ inches long. The five petals are always sharply pointed, and each flower in the cluster looks as if it were trying to stand clear of its neighbors and thereby display its full charm.

As with a number of other wildflower species, Scarlet Gillia's flowers do not always stick to their primary color. In some areas they have a tendency to salmon-pink or other shade in the pink range. Again, they may be pure white. These variations have nothing whatever to do with



25.

A REAL WESTERNER, GILLIA'S BLOSSOMS ARE SOMETIMES ALMOST WHITE

An enormous range of color is to be found among the wildflowers of our western mountains. There are times when one is tempted to imagine that Nature has spattered all of her paints hither and yon.

Wherever you find this delightful wild hairbell — the famous Blue Bells of Scotland — you are struck by its amazing blend of delicacy and wiry strength. No wonder it has been beloved for centuries.



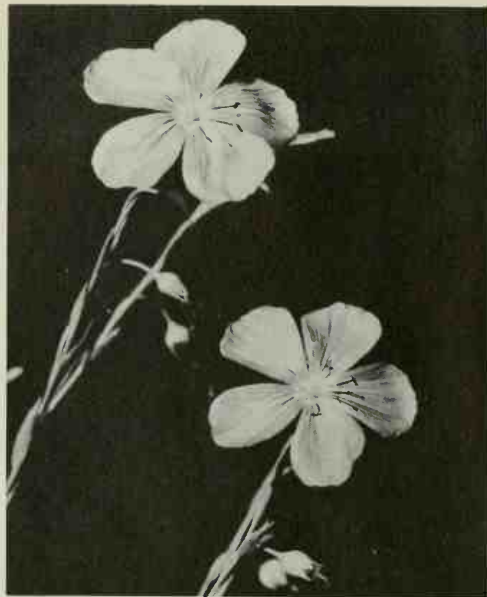
26. THE DAINY HAIRBELL IS VERY WIDESPREAD

man's interference or influence. One almost wonders if Mother Nature herself may not be quite sure of what color is most becoming, and so is doing a bit of experimental work.

Blue Bells of Scotland

IT WOULD BE DIFFICULT to find in the wildflower world of the Northern Hemisphere a single species which is more cosmopolitan and at the same time shows greater visible adaptations to different habitats than the campanula which is known as Harebell, Hairbell, Blue Bell and Blue Bells of Scotland (Plate 26). It is very widely distributed through Europe, Siberia and North America, and seems equally at home in sun or shade, lowland or highland, garden or wilderness, damp places or dry ones. One might well call it the most adaptable of its great tribe, and also the best beloved.

In shady woods the Hairbell may reach a height of two feet, while in sunny spots of the Gaspe Peninsula, Mt. Washington, the Rockies, northern Canada, and Alaska it is often limited to six inches or even less. Despite its addiction to far northern climates, it descends to within a few hundred feet of sea level as far south as central Connecticut.



This Blue Flax is as delightfully graceful as its blossoms are intensely blue. Its general appearance closely follows that of its related Garden Flax which is a prime favorite of gardeners everywhere. The latter species, however, lives longer under cultivation.

Fig. Q

This hairbell is exquisitely dainty and fragile-looking wherever you find it. Its stems are wire-thin yet incredibly springy, and its leaves are grass-narrow except for a basal clump of rounded ones. The typical flowers are a little less than an inch long and gloriously violet-blue. In a number of forms, or varieties, this color grades downward to pale blue and even an occasional white. The blossoming season is chiefly early summer, a somewhat elastic term which, calendar-wise, depends largely on the latitude and altitude of the plant's home.

The Incomparable Prairie Flax

ANOTHER MOUNTAINEER of invariable appeal is an American Blue Flax (Fig. Q), this time from the dry, high country of southeast Oregon. Its range also extends east to Wisconsin and southward through areas so comparatively flat that local people often call it Prairie Flax.

This graceful, intensely blue beauty is a close relative of our widely popular blue garden flax which originally was a European. Its sky-blue

blossoms are as much as 1½ inches wide and are carried near the tops of slim stems which may be nearly two feet tall. Prairie Flax blooms for a considerable period during the first half of summer and lives for several years.

Incidentally, both these flaxes belong to the same clan as a considerably larger species which is grown commercially for its useful fiber as well as the production of linseed oil. This rather valuable species has comparatively small flowers on branching stalks. It has a habit of running wild along railroad lines and assorted fields into which its seeds have chanced to stray.

Outstanding Beauty

WESTERN AMERICA, beyond the Great Plains, is fairly alive with native delphiniums or larkspurs. These famous plants range in height from

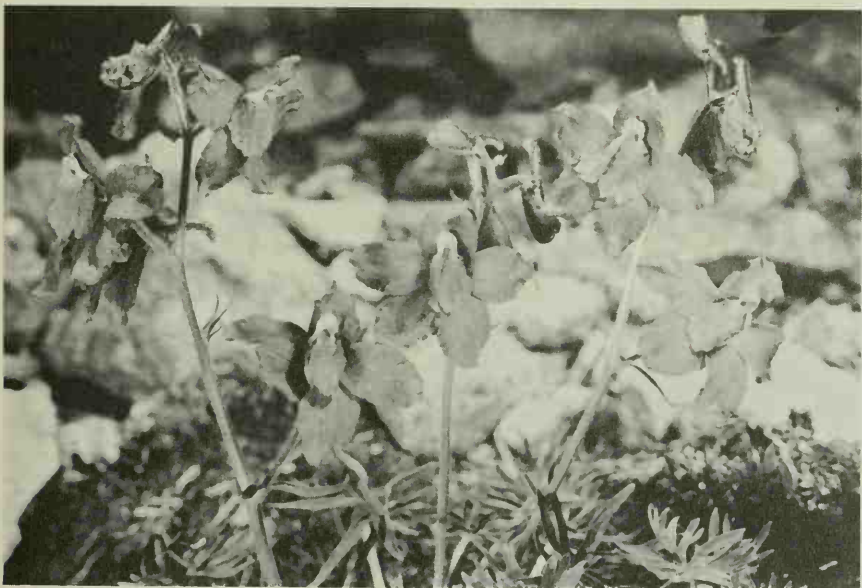


Fig. R Mountain Larkspur is far more compact than most of the garden members of the clan, yet this is accomplished with little if any sacrifice of blossom size and beauty. Even a casual glance proves it a true delphinium, leaves and all.

dwarfs of six or eight inches to giants of almost six feet, and their "spurred" blossoms run the color gamut from a fine deep blue to brilliant red.

Mountain Larkspur (Fig. R) is a worthy member of this immensely varied tribe. You can tell from the photograph that it is a dwarfish plant, as befits all dwellers in high places. Yet its relatively huge blossoms are typically single delphinium even to the whitish "bee" in the upper center of each flower. The much divided leaves, too, follow the family tradition.

Wild Buckwheat or Umbrella Plant

IN MIDSUMMER, when much of the bloom in the high mountains of the Northwest has gone by, the Wild Buckwheat (Fig. S) comes into



Fig. S Wild Buckwheat, kin of that cultivated crop from which excellent honey and bread are made is truly mop-headed when it comes into bloom. Its flowering time is midsummer and the place is almost anywhere along the line of our Continental Divide.

its peculiar own. It is a sprawly little eight-inch bush whose oblong leaves are evergreen even in the alpine climate. Its most striking characteristic is the mop-like heads of yellow flowers, occasionally so densely grouped that they justify the secondary popular name of Umbrella Plant.

This alpine standby, which sometimes grows side by side with deep blue dwarf lupines, is perhaps at its best in the Salmon River Mountains of central Idaho and the Wallowas in Oregon. But, like many other native plants which grow along North America's backbone, you may come upon it or one of its close relatives almost anywhere in that part of the country.

There are in the neighborhood of 150 different "wild buckwheats"



Fig. T One of the high mountain lappulas, considered a branch of the forget-me-not family. There is no denying the appeal of their growth and flower heads. But when their seeds form it is just as well to avoid them if you happen to be wearing soft clothes!

scattered through western North America and parts of Mexico. They are distant relatives of the important grain crop plant which is known as buckwheat in various regions of the world. That notable food producer, however, is a native of central Siberia.

Watch Out for the "Stickseeds"

THE ALPINE HEIGHTS of the California mountains and northward are well sprinkled with low-crouching, woolly-leaved plants which, although they are popularly called forget-me-nots and are actually related to them, have the botanical name of Lappula. They do bloom profusely (Fig. T), and in their rocky settings are a sight to be long remembered.

Not too much is known about the total number of species in this alluring group, but there are at least a half-dozen kinds which are native in our West. Their flower colors vary from blues to salmon pinks and finally white, as in the present case. At times they can be a bit troublesome to meticulous people because their seeds are in the form of little hooked burrs which have a determined way of sticking to soft clothing. Locally you may hear them called "stickseeds," as though that were the only thing they could do!

A Western Highlander

THE BLOSSOMS of the western Mountain Hollyhock (Plate 27) clearly show their relationship to the hollyhocks of countless gardens, although the petals spread to an overall width of only about two inches. Even so, the flowers are so closely crowded along the upper portion of the stalk that they make a memorable impression. The large, deeply cut leaves at the plant's base remind you of a maple's, but they have a tendency to show a silvery gray overcast.

This hollyhock, and its numerous first cousins, belong to the enormous mallow race, one of the most complex assemblages known to botanists. It includes shrubs and even trees, besides hundreds which die down to the ground every autumn and come up again the following spring. The Mountain Hollyhock normally thrives for a number of successive years.

A True Midget Is the Alpine Pink

ON THE HIGH peaks of Colorado, and west and north into the Cascades, the Alpine Pink, Cushion Pink or Moss Campion (Plate 28), is a memorable feature at various times from June to August. It is a dense, practically stemless midget, narrow-leaved and squatting so



27. MOUNTAIN HOLLYHOCK, A WESTERN HIGHLANDER

The idea of a small hollyhock growing wild among the mountains may seem strange to those to whom the name signifies only the statuesque standbys of cultivated gardens. But facts are facts!

Another glory of the peaks, native in the Old World as well as the New. In its many natural homes it is invariably an eye-catcher, but it sulks inconsolably in gentler surroundings.



29. "JOHNNY TUCK" COMES FROM OUR HIGH WEST

closely among the rocks that even its flowers are only two inches or so above the ground. There are whole sheets of these dainty blossoms, usually some shade of pink but occasionally almost white. Often they are intermingled with those of the Dotted Saxifrage or other beauties of that varied cliff-loving tribe.

Alpine Pink, is superb as you see it in the high Cascades or the Colorado Rockies. It is also found on many of Europe's peaks. This little beauty is the Great Desire of experienced rock gardeners everywhere. Some have been able to grow it at lower altitudes for a few years, but even these lucky ones rarely succeed in persuading it to bloom with anything like its normal generosity. Perhaps the rigors of life above timberline are too deeply ingrained in its constitution for it to accept any substitute.

Little Johnny Tuck

IN LITTLE JOHNNY TUCK (Plate 29) you meet a western mountain oddity whose form is quite suggestive of the Rock Paint-brush. There are about forty members in its tribe, all but one of them western North Americans. In general, their colors are less gaudy than those of the paint-brushes, with which they are often associated in the



28. MOSS CAMPION, A MAT ONLY TWO INCHES THICK!

One more instance of what might be termed an off-beat type of mountain flower. Its actual blossoms are almost enveloped by the soft pink casings which surround their bases.

Rockies and other ranges to the north and south. The over-all structure of the present group, and of the paint-brushes, is similar. This is particularly noticeable in the blossoms. The showy parts are the bracts, which almost hide the true blossoms.

The mountain wildflowers presented on these pages are only a figurative drop in the bucket of the grand total to be found within the borders of the United States and Canada. These are but a few of the reasons why any trip into our highland regions can be so rewarding.

The best months for such an expedition, broadly speaking, are June, July and August. Each of these will disclose as great a wealth of surprises as anyone could ask. Often the picture changes from week to week and even day to day, for wildflowers are living proof that Nature never stands still.

GLOSSARY OF SCIENTIFIC NAMES

Rainier Pleated Gentian (*Gentiana calycosa*)

Swamp Laurel (*Kalmia polifolia*)

Lily of the Valley (*Convallaria majalis*)

Fringed Gentian (*Gentiana crinita*)

Golden Avens (*Geum turbinatum*)

Stonecrop (*Sedum stenopetalum*)

Beargrass (*Xerophyllum tenax*)

Alpine Azalea (*Loiseleuria procumbens*)

Little Yellow Monkey-flower (*Mimulus primuloides*)

Red (Pink) Monkey-flower (*Mimulus lewisii*)

Marsh Marigold (*Caltha leptosepala*)

Pin Cushion Plant (*Diapensia lapponica*)

Evening Star (*Mentzelia decapetala*)

Blazing Star (*Laciniaria punctata*)
 Dwarf Forget-me-not (*Eritrichium argenteum*)
 Alpine Skunkflower (*Polemonium viscosum*)
 Wild Geranium (*Geranium nervosum*)
 Hulsea (*Hulsea carnosa*)
 Shrubby Cinquefoil (*Potentilla fruticosa*)
 Shooting Star (*Dodecatheon radicum*)
 Gold Cup (*Potentilla subjuga*)
 Heartleaved Arnica (*Arnica cardifolia*)
 Alpine Buttercup (*Ranunculus alpeophilus*)
 Rock Painted cup (*Castilleja rupicola*)
 Scarlet Gillia—Trumpet Flower (*Gilia aggregata*)
 Harebell, Bluebell (*Campanula rotundifolia*)
 Mountain Hollyhock (*Sphaeralcea rivularis*)
 Alpine Pink, Moss Champion (*Silene acaulis*)
 Johnny Tuck (*Orthocarpus erianthus*)
 Star Gentian (*Swertia perennis*)
 Elephant Head (*Pedicularis groenlandica*)
 Grass of Parnassus (*Parnassia finbriata*)
 Purple-fringed Phacelia (*Phacelia idahoensis*)
 Fern-leaved Lousewort (*Pedicularis bracteosa*)
 Blue Camas (*Camassia quamash*)
 Elephant Head (*Pedicularis groenlandica*)
 Pine Drops (*Pterospora andromedea*)
 Dotted Saxifrage (*Saxifraga bronchialis*)
 St. Johnswort (*Hypericum scouleri*)
 Green Gentian (*Frasera speciosa*)
 Monkshood (*Aconitum columbianum*)
 Mountain-cranberry (*Vaccinium vitis-ideea*)
 Yellow-Monkey-flower (*Mimulus lugsdorfii*)
 Wild Blue Flax (*Linum lewisii*)
 Mountain Larkspur (*Delphinium burkei*)
 Wild Buckwheat (*Eriogonum umbellatum*)
 White Forget-me-not (*Lappula subdecumbens* or *Myosotis macrosperma*)
 Rose Crown (*Sedum rhodantha*)

ABOUT THE AUTHOR

ROBERT S. LEMMON has been a naturalist all his life. He has written, edited and lectured extensively on gardening, trees and wildlife for more than forty years and has served successively as managing editor of *House & Garden*, founder and editor of *Real Gardening* and managing editor of *The Home Garden*. He has written some 300 articles in his chosen field for leading magazines and is the author of nine books of which the most recent are *How to Attract the Birds*, *The Birds Are Yours*, *The Best Loved Trees of America*, *Our Amazing Birds*, and *All About Birds*.

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AUDUBON MEANS CONSERVATION — Theodore Roosevelt said: "I do not understand how any man or woman who really loves nature can fail to try to exert all influence in support of such objects as those of the Audubon Society."

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